STANWAY, COLCHESTER
ESSEX

ECOLOGICAL ISSUES

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STANWAY, COLCHESTER, ESSEX

ECOLOGICAL ISSUES

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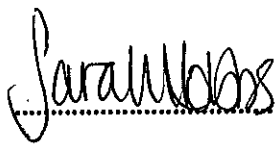
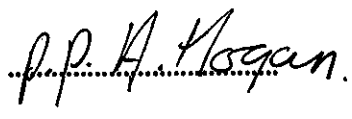
Main Authors
Sarah Hobbs BSc (Hons) AIEEM
Karen Colbourn BSc (Hons) CBiol MIBiol MIEEM

Contributors/Surveyors
Sarah Hobbs BSc (Hons) AIEEM

Report Prepared for Issue by:
Sarah Hobbs



Report Approved for Issue by:
Karen Colbourn



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EXECUTIVE SUMMARY

Ecological Planning & Research Ltd was commissioned by George Wimpey UK Ltd (now Taylor Wimpey) to update the ecological appraisal of land at Stanway, Colchester, Essex in April 2007. The construction of approximately 250 houses is proposed, together with the associated gardens, access roads and public open space. The original survey was undertaken by CPM in 2001. The aim of this survey was to identify any significant changes since 2001 and to re-assess the potential for significant ecological impacts in light of current legislation and policy.

As the proposal is for an extension of existing housing in the area, the only effects of the development considered likely to trigger ecological impacts beyond the boundaries of the development site are that of pollution or hydrological effects upon the ecological features associated with the local watercourse, the Roman River. However the planned use of Sustainable Urban Drainage System (SUDS) should counteract any adverse effects during the operational phase of the scheme.

The site at Stanway consists of a triangle of land bounded by roads and existing residential developments. The habitats, vegetation and potential to support protected and notable species were considered.

This appraisal identified no designated sites in the locality considered vulnerable to the effects of the development. A number of Local Wildlife Sites were noted near to the site, however it is thought that the vegetation contained within these sites, and the absence of public access through most of them mean that they are not at risk from significant adverse impacts due to the proposals.

There have been no significant changes in the habitats and vegetation within the site since 2001. The site comprises an arable field, grassland with associated conifer plantation, two areas of woodland and boundary hedgerows. None of these habitats is of such great intrinsic value that there is likely to be an 'in principle' objection to housing development at this site.

The desktop study for the appraisal revealed records of Badgers, Dormice, and Stag Beetles within the zone of influence of the proposed development. In common with the previous survey, this appraisal also found the site to have the potential to support these legally protected and notable wildlife species. A dead Stag Beetle was also noted during this survey; which is a priority species of the Essex local Biodiversity

Action Plan. Notable plant species have been recorded in similar habitats in the vicinity, indicating that the site has the potential to support rare or notable plants.

This report recommends further surveys, the outcome of which will feed into the scheme design which will seek to avoid or mitigate significant adverse impacts. In terms of bats, Badgers and Dormice, licences from Natural England may be needed. Such licences are only granted once full planning permission has been obtained.

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ECOLOGICAL ISSUES

1.0 INTRODUCTION

1.1 Background

Ecological Planning & Research Ltd (EPR) was commissioned by George Wimpey UK Ltd (now Taylor Wimpey UK Ltd) to update the ecological appraisal of land at Stanway, Colchester, Essex in June 2007. An earlier appraisal had been undertaken in 2001 under the supervision of the same consultant (Karen Colebourn, then Regini) when she worked for CPM.

The aim of this appraisal is to:

- Enable the strategic planning process to proceed in accordance with biodiversity policy and legislation
- Identify any changes since the 2001 assessment;
- Identify potentially significant ecological impacts as a result of the proposal;
- Recommend any further work (such as targeted species surveys) in order to assess the value of the site and therefore evaluate the impacts of detailed proposals.

1.2 Site Overview

The site lies to the south east of the town of Colchester, just south of the A12 road. It is surrounded to the south and east by areas of arable farmland, with some small blocks of woodland, typical of the countryside in this area. There is a sand and gravel quarry lying to the immediate west of the site. See **Map 1** for site location.

The Application Site is located at the head of a small valley within the catchment of a small watercourse; the Roman River, which runs approximately 2km south west of the site and can be seen on **Map 1**.

The site itself is thought to have once been used for gravel extraction, although current land uses are arable, grassland, a Christmas tree plantation and a kennels. The application site constitutes a triangle of land bounded by Dyers Road to the east, Warren Lane to the west and residential houses and their associated gardens to the north.

1.3 Outline of the Scheme

The proposed development involves the construction of approximately 250 dwellings with their associated access roads, parking and open space for recreational purposes. The current indicative layout of the scheme can be seen at **Map 2**.

1.4 Relevant Biodiversity and Nature Conservation Policy (see Appendix I for extracts)

1.4.1 Government Policy

The Government sets out its objectives for conserving and enhancing biodiversity in Planning Policy Statement 9; Biodiversity and Geological Conservation (PPS9, August 2005). This is the main source of Government Guidance on Nature Conservation and considers the integration of nature conservation policies and land use planning. The Key Principles of PPS9 describe the importance of delivering biodiversity benefits through development and of avoiding harm and, where necessary, providing mitigation and compensation for significant adverse affects to biodiversity. This is described in **Appendix I.**

1.4.2 Local Planning Policy

This site is included with the area covered by the current *Colchester Borough Local Plan* (March 2004), which contains Chapter 5: *Countryside*, within Section A: *Resources*. This chapter includes policies to safeguard local and national designated sites, important wildlife habitats within the area, as well as protected species and others that are included within the Local Biodiversity Action Plan.

1.4.3 Biodiversity Action Plans

The UK Biodiversity Action Plan is the Government's response to the 1992 Convention on Biodiversity (The Rio Convention), with the aim of halting loss of biodiversity in the UK. Biodiversity strategy is implemented at a local level through county and district level Biodiversity Action Plan (BAPs). The site falls within the geographic area covered by the following BAPs:

- UK Biodiversity Action Plan (UK BAP)
- A Local Biodiversity Action Plan for Essex (*'A Wild Future for Essex'*)

1.5 Summary of Relevant Legislation

There are a number of pieces of legislation relevant to the proposed scheme. These are listed below. Further details of this legislation can be seen at **Appendix II**

- The Wildlife & Countryside Act 1981 (as amended)
- The Countryside & Rights of Way Act (CRoW Act) 2000
- The Protection of Badgers Act 1992

- The Conservation (Natural Habitats &c) Regulations 1994 (known as the Habitats Regulations)

2.0 ASSESSMENT METHODOLOGY

2.1 Best Practice Guidance

This report has been prepared in accordance with to the *Guidelines for Ecological Impact Assessment (EcIA) in the United Kingdom*, published by the Institute of Ecology and Environmental Management (IEEM, 2006). This has been approved as good practice by all relevant UK agencies.

2.2 Zone of Influence

The scope of the appraisal is to identify features of ecological interest that are likely to be affected by the proposed development. As development may have an impact beyond the site boundary, it is important to identify its zone of influence and to assess the potential for significant impacts throughout that area. The predicted zone of influence for this scheme is discussed in **Section 3** and shown on **Map 3**.

2.3 Scale of Values

The geographic frame of reference used for assigning value to ecological features is based on that recommended in the IEEM guidelines, where ecological resources are assessed as having value at the following levels:

- International;
- UK;
- National;
- Regional;
- County;
- Borough;
- or Local and;
- Within the zone of influence only.

Valuing ecological features can be complex. Clearly the level of legal or policy protection is a very important consideration, but, in many cases, other factors are also relevant. Intrinsic ecological value is often based on the rarity and rate of decline of a feature within a given geographic level. Additional considerations include: the function served within the wider ecosystem; potential value; social and educational value to the local community. Effects on ecological features of local value and above were considered as part of this assessment, in order to identify any issues that would require consideration under the relevant national policy and legislation.

2.4 Desktop Study

The Multi Agency Geographical Information for the Countryside (MAGIC) database was interrogated for information regarding nationally or internationally designated sites within the vicinity of the site. Essex Ecology Services Ltd was commissioned to undertake a data search of UK protected and notable species records and non statutory sites within the vicinity of the site in order to assess those that lie within the

zone of influence of the development. Essex Field Club County Recorder for Bats, Essex Amphibian and Reptile Group ARG and Essex Badger Group were also contacted for records of protected species within the area. However at the time of writing, no response has been received regarding these species groups.

2.5 Survey Scope

The scope of the survey is to assess features of ecological interest that would be affected by development of the site.

2.6 Field Survey Methodology

Sarah Hobbs of EPR visited the site on 11 June 2007. The different habitats and features of the site were identified and their ecological value assessed. Particular attention was paid to their potential to support protected species. Signs of protected species were also noted. Areas immediately adjacent to the site boundary were also assessed where they were considered to fall within the zone of influence.

2.7 Survey Constraints

It was not possible for the surveyor to access all areas of the application development site during the survey, principally the area of land that runs along the northern boundary of the site, which was not accessible due to landowner permission constraints. The surveyor also did not access land owned by the Kennels and Cattery business at the time of survey. However, some of these areas were visible from the remaining parts of the site, and these are described where possible.

3.0 ACTIVITIES ASSOCIATED WITH THE SCHEME AND THE LIKELY BIOPHYSICAL CHANGES

3.1 Introduction

In order to be able to assess the impacts of a development it is necessary to identify any activities that may result in biophysical changes and thereby result in an impact on features of ecological value. There are three stages of this scheme that include activities which may have an impact on features of ecological value; site preparation, construction and operation. Examples of activities likely to generate impacts are outlined in IEEM guidelines, and the full list can be seen here in **Appendix III** (IEEM, 2006).

3.2 Activities Associated with the Scheme and the Likely Biophysical Changes

3.2.1 Site Preparation and Construction Activities

- Construction and soft landscaping provides the opportunity to design and create habitats,
- The scheme will involve the clearance of some habitats within the site boundary;
- There will be increased human activity, site traffic, noise, dust and light;
- There will be a heightened risk of pollution and sediment entering water-courses during construction;
- The replacement of agricultural land with houses, roads and hard-standing will, reduce the amount of rainfall that soaks through the ground, thereby changing the hydrological regime.;
- No major works regarding off site utility provision is necessary. All construction facilities will be housed within the development site.

3.2.2 Operational Activities

- If conventional drainage techniques are employed, the water run-off from these hard surfaces will be piped into these streams, and will therefore enter them and the Roman River more quickly, possibly having accumulated polluting solutes and sediment *en route*.

- The increased population will result in an increased demand for recreational opportunities, such as dog walking areas and informal children's play areas. This may result in increased disturbance and wear and tear to features of ecological value on or near to the site. In particular, dog walkers can create a disturbance on wildlife. However, according to the ongoing work into the mitigation of these impacts on the Thames Basin Heaths, people only walk 1 – 2 km from home. Only those sites which are particularly attractive (large size, good facilities) are likely to attract people from further than this distance.

- There will also be increased predation by household cats on wildlife within 400m of the housing.

- The operational phase of the development will also result in permanently increased levels of artificial light during the night due to domestic and street lighting.

3.3 Definition of the Zone of Influence

Of the development activities described above, the most far-reaching are considered to be the following:

- Potential for enhancement of local biodiversity;
- Potential for change to hydrological regime in the area, although there seems little likelihood of effect on the waterbodies in the gravel pit to the west of the application site due to the local topography and the intervening road.
- Potential changes to flow rates in local water courses, including the Roman River, 2km to the South East;
- There is no likely potential pollution and increased sedimentation risk for waterbodies in the adjoining gravel pit due to local topography, nor for the Roman River as there is no direct drainage link to it from the development site.
- Potential damage to habitats and disturbance to wildlife in recreational areas within 5.2km travel distance of the development site. This figure arises from the ongoing discussions into mitigation for similar impacts on the Thames Basin Heaths SPA. In August 2007, it was released as the figure agreed by the Department for Communities and Local Government, the Government Office for the South East, the South East England Regional Assembly and Natural England;
- Potential predation of wildlife within 400m of the new housing. Again, this is the accepted figure used in the consideration for the avoidance of similar impacts to the Thames Basin Heaths SPA.

Therefore the furthest distance in which vulnerable features are considered likely to be affected is 5km (See **Map 3**). Given the indirect nature of road access, this is considered likely to encompass all recreational sites within 5.2km travel distance from the scheme. Features considered vulnerable to these effects have been identified, evaluated and, if of at least Local Value, impacts are assessed in the following sections.

4.0 ECOLOGICAL BASELINE AND EVALUATION OF FEATURES

4.1 Natural Area Profile

Stanway lies within Natural Area Profile number 66: The London Basin. Natural Areas were developed by English Nature (now Natural England) as a categorisation tool for different areas of similar character in terms of geology and habitats (see www.english-nature.org.uk for more information). The London Basin Natural Area is one of the two largest in the country, and covers seven counties. This area is typically underlain with chalks and is covered by a thick layer of clay and drifts of sands and gravels.

4.2 Designated Nature Conservation Sites

No statutorily designated sites lie within the zone of influence of the proposed development. A number of non-statutorily designated sites (known as Local Wildlife Sites) lie within the zone of influence. A list of these can be seen at **Appendix IV**, and they are shown on **Map 3**

The closest of these Local Wildlife Sites to the application site boundary is that of Butcher's Wood/Olivers Thicks and Copfordhall Churchyard, which are located approximately 1km to the southeast and southwest of the site respectively.

These sites are comprised of dry woodland with associated ground flora. The only Local Wildlife Sites with public access within this area are Copfordhall Woods and Ram Plantation Complex. The record centre data search results did not describe the reasons for designation, however the vegetation listed is that of relatively commonplace species typical of dry woodlands in this country.

The previous report describes how the adjacent gravel pit contains a number of notable invertebrate fauna, which could lead to its designation as a Local Wildlife Site. However, the desktop study did not reveal any indication that any such designation has currently been made.

4.3 Habitats and Vegetation

4.3.1 Introduction

The habitats and features noted during the Field survey are shown on **Map 4**.

4.3.2 Area A: Arable Field

The southern part of the site comprises an arable field at the time of both this and the 2001 surveys. The crop is bordered by a field margin of approximately 1m, and this margin was seen to support a range of common colonising species including Cow Parsley *Anthriscus sylvestris*, Common Fumitory *Fumaria officinalis*, Creeping Thistle *Cirsium arvense*, Common Nettle *Urtica dioica*, Teasel *Dipsacus sp* and common grass species including Yorkshire Fog *Holcus lanatus*, False Oat-Grass *Arrhenatherum elatius* and Cock's-foot *Dactylis glomerata*. Area A is shown in **Photo 1.**

4.3.3 Area B: Grassland and Conifer Plantation

Area B comprises tall grass species and encroaching scrub vegetation. The 2001 survey states that this area was arable up until around 1991, but that the field has been managed minimally since that time, and the ruderal vegetation noted during this 2007 survey reflects this. Plant species observed include False oat grass, Yorskhire Fog, Cock's-foot as well as Common Ragwort *Senecio jacobaea*, Ribwort Plantain *Plantago lanceolata*, Cut-leaved Crane's-bill *Geranium dissectum*, Red Clover *Trifolium pratense*, Campion *Silene sp*, Nettle and Stitchwort *Stellaria sp*. Scrub included Bramble *Rubus fruticosus* agg., Gorse *Ulex sp*, Dog-rose *Rosa canina*, Hawthorn *Crataegus monogyna* and Oak *Quercus sp* saplings. Area B is shown in **Photo 2.**

4.3.4 Areas C and D

Areas C and D were described in the 2001 survey as rough grassland (area C) and ruderal habitats with amenity grassland/garden habitats to the west of the woodland (area D). Neither of these areas were accessible during this survey due to landowner constraints.

They are described in the previous report as follows:

Area C

This field is dominated by tall false oat grass, with timothy, cocksfoot and bent grasses also represented in places. The woodland side of the field has begun to scrub over with large patches of bramble forming. Also present across the area are a number of small trees and tree saplings of elder, birch, hawthorn, oak, sycamore as well as some broom and patches of rosebay willowherb. Despite the invasion of these species this field still maintains a predominantly grassland composition. This mosaic may provide opportunities for reptiles, small mammals and other fauna and, whilst of no apparent floristic value, this area is considered of low-negligible ecological value.

Area D

To the east of the woodland lies a significant area where management has been abandoned and succession has already progressed to produce thick scrub and tall ruderal habitats. This area supports extensive, tall patches of bramble, a large number of developing shrubs and trees, generally between 2-4m in height. There are also some large, mature trees on the peripheries. Where the scrub is absent a dense flora of bramble, nettle, rosebay willowherb and false oat grass dominates, although a few more open patches exist in which species such as ragwort, yarrow, perforate St. John's-wort and field scabious (Knautia arvensis) may be found.

From what could be observed from the boundary however, it is thought unlikely that these areas have changed significantly in character since the original survey.

4.3.5 Hedgerows and Treelines

The site is bordered and intersected by hedgerows containing a variety of species including Hawthorn, Gorse, Dogwood *Cornus sanguinea*, Broom *Cytisus scoparius* and Elder *Sambucus nigra* and interspersed with larger standards of Pedunculate Oak *Quercus robur* and Sycamore *Acer pseudoplanatus*.

The hedgerows on the eastern, northern and western boundaries of Area A are in the most part dense continuous hedgerows containing mostly native plant species with a number of larger standards.

The hedgerow to the south of this area separates the site from residential gardens, and reflects this in its main component of Cypress Leyland *Leylandii* sp interspersed with Privet *Ligustrum* sp and other non -native garden shrubs.

Area B is bounded to the west and south with hedgerows of similar character to those in Area A. On the eastern side, with the boundary of the kennels and cattery, tree line was noted containing Poplar *Populus* sp, Oak and Sycamore.

The northern part of Area B is bounded by a tree line of mature Oak, with an understorey of dense bramble in places. This can be seen in **Photo 3**.

4.3.6 Woodland

A small area of woodland lies to the north-eastern corner of Area 1. This comprises Pedunculate Oak, Sycamore and Beech *Fagus sylvatica*. The associated ground flora includes Ground-ivy *Glechoma hederacea*, Bramble, Garlic Mustard *Alliaria petiolata* and Lords-and-Ladies *Arum maculatum*.

The larger woodland area lying in the northern area of the application site was not accessible at the time of this survey due to landowner permission constraints. In the 2001 survey, this is described as follows: *'dense areas dominated by tall hawthorn and elder as well as mature woodland areas around the edge which are dominated by large oak trees, including Sessile Oak (Quercus petraea). Much of the ground below the oaks is heavily disturbed by recreational activities and the vegetation has been eroded to leave bare ground. However, around the edges, the ground flora includes ivy, foxglove and sweet violet, with areas of holly understorey also present. The ground beneath the dense shrub layersupports little flora, although mosses such as Eurichium praelongum and Prunus sp. Suckers are common in some patches '*(CPM 2001).

During this survey, a view into the woodland was possible only from its southern edge. However, from this it was clear that this area is unlikely to have changed significantly.

4.4 Protected/Notable Species

4.4.1 Mammals

Bats

There were no bat records returned within the zone of influence of the site as indicated on **Map 3**.

The application site contains a number of mature trees, particularly associated with the hedgerows and woodland blocks. These have the potential to provide bats with roosting opportunities within the site. The hedgerows, woodland and grassland areas may provide local bats with foraging opportunities, as well as their linkage to other suitable habitat in the wider area.

In its surburban context, it is possible that bats roosting within the nearby houses will use the application site for foraging and commuting to other foraging areas in the adjacent countryside, as well as roosting within some of the trees.

Badger

The desktop study revealed a number of Badger records; most notably the sett within the current sand and gravel works to the immediate west of the site. The location of this record can be seen at **Map 3**, which lies approximately 200m from the western site boundary.

The 2001 survey describes a *'probable badger hole'* located within the hedgerow in between Areas B and D. This was not observed during this 2007 survey, although this may be due to Area D being inaccessible at the time. No other signs of Badgers using the area were noted, although the woodland block in the central northern area has potential to provide Badgers with suitable habitat for setts. Similarly, the vegetation noted in other areas of site, particularly the scrub areas, as well as local gardens, have the potential to provide Badgers with food sources, thus giving the site potential to support Badgers, although the current survey results suggest that they are not heavily dependent on the area.

Badger activity in peripheral parts of their territory varies over time. It will be necessary to update surveys regularly to ensure that the development is undertaken in accordance with the Protection of Badgers Act.

Dormouse

The desktop study returned a number of Dormouse *Muscardinus avellanarius* records within the wider area, the closest of which lie approximately 3km from the application site, to the northeast. These are particularly associated with the woodland areas to the south. These are not directly connected to the application site with continuous habitat necessary for Dormice to commute, i.e. woodland and hedgerows, particularly due to the presence of the two roads and track separating the location of the records with the application site.

The hedgerows bordering the site have potential to support Dormice in terms of foraging and shelter, particularly because of their connectivity with the woodland blocks within the site.

Should Dormice be within the local area, they are likely to be using all suitable connected habitat for shelter, foraging, hibernation and commuting to different areas. Such suitable habitat includes woodland and hedgerows that supports a diverse range of plant species to provide dormice with a continuous supply of food and shelter throughout the year. For hibernation sites, Dormice are known to use suitable spaces in banks and around vegetation roots.

Water Vole and Otter

There are two rivers within 3km of the site, River Colne to the north and Roman river to the south west. Records for Otter *Lutra lutra* and Water Vole *Arvicola terrestris* were returned for both of these watercourses; the closest of which lie approximately 4km to the south east of the site.

These species are likely to use habitat within close vicinity of the watercourse for shelter and foraging.

No watercourses run within the site boundary, and no field signs or suitable habitat was noted of these species.

4.4.2 Nesting Birds

A number of bird species were noted during this survey, including Green Woodpecker *Picus viridis*, Chaffinch *Fringilla coelebs*, Robin *Erithacus rubecula* and Magpie *Pica pica*, Skylark *Alauda arvensis*, an Essex Local Biodiversity Action Plan species, was also noted, particularly associated with the arable field of area A.

The desktop study returned two records for notable bird species within the zone of influence. These are for Skylark and Songthrush, both at the same location approximately 4km to the south east of the site.

Hedgerows, scrub and woodland blocks, including the Christmas tree plantation provide birds in the area with suitable nesting habitat. Skylarks are also likely to be using the central areas of the site as well as other suitable habitat in the wider area for breeding and nesting.

4.4.3 Reptiles

Reptiles have been recorded within the zone of influence, particularly in association with urban sites.

The 2001 survey, found two Slow Worms *Anguis fragilis* and a Common Lizard *Lacerta vivipara* along the western boundary of Area B.

A number of areas were noted during the 2007 survey that have the potential to provide habitat for reptile species. These include the tussocky grassland and scrub areas within Area B, as well as the hedgerows and associated banks in Areas A and B.

It is therefore very likely that reptiles are continuing to use this site and areas of suitable habitat within the zone of influence and will be vulnerable to effects of the proposals.

4.4.4 Amphibians

No records were returned for Great Crested Newts *Triturus cistatus* within the zone of influence of the development site, although a number of records exist in the wider area; within 5km of the site.

There were no waterbodies noted within the site boundary. However, the hedge banks running around and across the site are suitable to support Great Crested Newt during their terrestrial phases, should a suitable aquatic habitat be nearby. The most likely breeding site is the sand and gravel workings to the immediate west of the application site. Aerial photographs indicate that these contain standing water.

However, the application site is separated from the sand and gravel workings by Warren Lane. Therefore, any Great Crested Newts must cross Warren Lane in order to move between waterbody and terrestrial habitat. A road is considered to be a barrier to Great Crested Newt movement if traffic flow throughout the night exceeds that of '*about 20 vehicles per hour*' (Oldham *et al.* 2000). The traffic flows for Warren lane have been measured for peak times as part of the traffic survey, and it is possible to predict from these figures what night time flows will be. Night-time flows were estimated to exceed 20 cars per hour throughout the night (calculations made based on day time figures found approximately 108 cars between 2100-2200, 62 cars between 2200-2300 and 41 cars between 2300-0000). The application site is therefore considered not likely to support Great Crested Newts.

4.4.5 Invertebrates

A dead Stag Beetle *Lucanus cervus* was noted during this survey (see **Photo 4)**, found in the northern part of Area B**.** The site is considered to provide suitable habitat for Stag Beetles, particularly in the hedgerows and woodland areas, which may provide dead wood and other habitat suitable for breeding sites, shelter and feeding opportunities.

4.5 Valuation of Ecological Features

As no detailed surveys have been undertaken, therefore it is not possible to place firm values on the features described above. However, it has been possible to make a judgement about likely values, given local information and professional experience.

The open vegetation types are largely commonplace and considered to not likely be of value intrinsically although, as mentioned in the 2001 report, the record of notable plants within 1km of the site indicates that further survey is necessary before this assessment can be made firm.

The network of mature woodland, trees and hedgerows are likely to hold a higher intrinsic value in terms of the local community, despite being thought likely to be mostly secondary growth following the sites former use as a sand and gravel extraction site (CPM 2001). The woodland, hedgerows and their associated mature trees are therefore likely to be of local value.

Habitats present within the site have also been identified as having the potential to support protected species, specifically bats, Badgers, Dormice, nesting birds, reptiles and notable invertebrates such as Stag Beetles. Further surveys are required to ascertain how these species may be affected by the development proposals. Bats and Dormice are protected at a European level, Badgers, nesting birds and the reptiles likely to be found on this site are protected at a national level, and Stag beetles are protected under the Essex Local BAP, UK BAP and are listed under Annex II of the Habitats Directive. However at this stage, the area is considered likely to be of no more than local value to an assemblage of some or all of these species.

5.0 POTENTIAL IMPACTS AND OPPORTUNITIES FOR ENHANCEMENT AND MITIGATION

5.1 Introduction

This section discusses the potential impacts on ecological features considered likely to be of local value or above. Opportunities for mitigation and enhancement are then flagged. All will require more detailed assessment and prescriptions when a planning application is submitted. .

5.2 Enhancements through landscape design

Soft landscaping and planting design will reflect local biodiversity objectives, specifically those which include the protection and enhancement of hedgerows, woodland and habitats within urban areas through the local BAP.

The selection of new trees and shrubs to reflect locally prevalent plant species, particularly those providing benefits for wildlife in the form of food sources, and continuation of habitat should be adopted where possible in line with the mitigation strategy.

The creation and management of 'wildlife areas' within the scheme can provide further benefits to biodiversity through the encouragement of the growth of local native plant species, which will provide food and shelter for wildlife.

5.3 Site Preparation and Construction Activities

5.3.1 Site Preparation

The indicative masterplan displayed at **Map 2,** shows the vegetation to be retained within the scheme. As is shown, the blocks of woodland to the north and east of the site are to be retained, along with the majority of hedgerows around the site boundary.

There will be some breaches in hedges for road access. Removal of stretches of hedgerow may constitute a negative impact in terms of loss of mature trees, species diverse hedgerow and food and shelter for insects, birds, Dormice and bats. Furthermore, there is the risk of the network of habitats becoming fragmented, thereby reducing its value to species which rely on such vegetation corridors to move around their territory, such as bats and reptiles. There is therefore a risk of a significant impact on several ecological features likely to be of local importance. Furthermore, Local BAP objectives include the retention, enhancement and appropriate management of both species rich hedgerows in the county as well as natural networks across urban areas.

The indicative design of the scheme therefore aims to minimise breaches in hedges. Where they cannot be avoided, the breaches should be located to avoid mature trees and stretches of species rich hedgerow as far as is possible.

In order to compensate for the loss of hedgerow and minimise effects of the fragmentation of the hedgerow network, new hedges and tree lines will be planted to connect retained hedges, both on and off site. These will comprise native species prevalent in the locality, such as those recorded elsewhere within the site.

5.3.2 Site Preparation and Construction Activities

The increase in disturbance through traffic, noise, dust and light associated with construction activities could have impacts upon habitats and species which have been shown to be likely to occur within the parts of the zone of influence vulnerable to these effects. Negative impacts upon such species and habitats may be in direct contravention of legislation and policy that protects them, as described in **Section 1** and **Appendix II**.

Detailed surveys will be needed to establish whether there are populations of animals which could be affected by these impacts, and if so, how best to avoid or reduce the impacts. If species protected by European legislation are found likely to be affected, it will be necessary to apply for a licence. Some impacts (such as disturbance to breeding birds) could be simply avoided by the timing of works.

5.3.3 Surface Water Runoff and Pollution

There are tried and tested techniques for controlling run-off during construction. These will be implemented in order to avoid negative impacts, and to therefore avoid contravention of relevant legislation and policy described in **Section 1** and **Appendix II**.

These potential impacts should also be weighed against the current situation; that of working agricultural practice occurring presently within Area A of the site. Agricultural practices are likely to produce chemical pollutants of their own, particularly in the form of chemicals sprayed upon the crops, which may enter the local water system. The cessation of this associated with the start of construction activities may lead to positive impacts upon local wildlife.

5.4 Operational Activities

In order to avoid possible changes to hydrology and the flow patterns in local watercourses, the development will use a Sustainable Drainage Scheme. This presents the opportunity to create wetland features, which would add to the diversity of the area and provide aquatic habitat for species such as amphibians, where they do not currently exist. Enhancements such as this address the requirements of PPS9 and local policy in terms of providing enhancements for biodiversity.

As discussed in **Section 4** of this report, there are no ecologically important sites which are likely to be affected by increased recreational demand.

The Local Wildlife Sites within the zone of influence are described in **Appendix IV.** These sites are largely comprised of woodland, and because of the robust vegetation listed throughout as well as the lack of public footpaths throughout the sites, it is thought that they are not vulnerable to disturbance caused by an increase of human activity in the area.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The 2007 ecology survey identified no major changes since the survey undertaken in 2001. Whilst further survey will be needed to inform a detailed design and application, there is no indication from the work so far undertaken that there is any 'in principle' ecology reason why this site should not be developed for housing.

Further survey will be required to inform the final scheme design and develop strategies for enhancing biodiversity, avoiding harm, minimising it or providing compensation where required.

6.2 Recommendations

6.2.1 Further Survey needed for a Planning Application

Vegetation

Due to the occurrence of notable plant species noted in the previous report, a targeted botanical survey is recommended in order to identify any important flora that may be affected by the proposed development.

Bats

It is recommended that a targeted bat survey be undertaken of the trees within and immediately adjacent to the site boundary. This should consist of a detailed inspection of the trees for evidence of bats. Following this, it may be necessary to undertake emergence and activity surveys of the trees with bat roost potential. Emergence and activity surveys entail the observation of potential bat roost sites at dusk to note any bats leaving the roost, and to assess how bats are using the area. The inspection of trees can be carried out at any time of year, although emergence surveys should be undertaken between April and September when bats are at their most active. This will inform the need for application for a Natural England licence in order to conduct the development works.

Badgers

A targeted Badger survey is recommended in order to ascertain whether Badgers are present within the site, and, if so, how they are using it. Such a survey involves a systematic search of the application site and the land surrounding it as far as is possible for signs of Badger activity including setts, paths, latrines, hairs and feeding signs. The results of this survey will inform the need of any licence necessary to work near Badger setts. Although Badgers do not fully hibernate, Badger surveys are best carried out at a time of year when they are most active, and therefore activity signs can be seen most readily. Early spring and late autumn are considered ideal times to survey for Badgers as vegetation levels are low and Badger activity levels are high at these times.

Dormice

A Dormouse survey is recommended within the site. This should consist of a targeted assessment of the vegetation present in terms of supporting Dormice for shelter, commuting and foraging, as well as their connectivity with other areas of suitable habitat. It may be recommended following this assessment to undertake further survey via Dormouse tubes or a nut search. These survey methods are used to confirm the presence of Dormice within an area through definitive evidence.

Dormouse tubes are set up in vegetation and allow for the presence of Dormice to be confirmed in an area through the presence of Dormice and/or their nests within the tubes. Tube surveys are best set up during spring and late summer, with the tubes being checked throughout the summer and in the autumn for the most reliable results.

A nut survey can be conducted where there are sufficient stands of fruiting Hazel *Corylus avellana.* The nut survey searches for the characteristic tooth markings on Hazel nuts that have been opened by the species. Nut searches are best carried out from mid September until late December, when the Hazel is in mast. Hazel nuts degrade over time and although they can persist on the woodland floor for over a year, Bright *et al* (2006) advise that nut searches should be carried out when Hazel trees are actively in mast so that the distinctive tooth marks are obvious and can be accurately identified.

Reptiles

A number of areas on the site are suitable for the "widespread" reptile species, and in 2001, Slow Worms and a Common Lizard were observed in one of these areas. Therefore a reptile survey is recommended in order to establish whether reptiles are still present on site, the distribution of reptiles across the site and to provide data to allow the status of reptile populations on the site to be assessed.

The survey should be undertaken using direct observation and artificial refugia techniques. The recommended density of refugia is at least 10 per hectare, with more concentrated in areas deemed particularly suitable for reptiles (Froglife, 1999) The survey is conducted by checking beneath and between the refugia in suitable weather conditions, and recording any reptiles observed. Ideally the survey should take place between March and June or during September, dependent upon the weather, and should consist of between five and seven survey visits. Reptile surveys cannot be undertaken during the winter when the animals are hibernating.

Breeding Birds

Because of the habitats present within the site, and the confirmed occurrence of Skylark during this survey, an assessment of the breeding birds using the site is recommended through further detailed survey work.

Invertebrates

The presence of the local Biodiversity Action Plan species of Stag Beetle in the area indicate that further survey work should be conducted in order to assess the habitat present for its potential to support Stag Beetles, and consequently their status within the zone of influence. This may then inform the Mitigation Strategy in order to ensure that biodiversity and local planning policy targets are met.

7.0 REFERENCES

Colchester Borough Local Plan (March 2004). www.colchesterlocalplan.co.uk

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IEEM (2006). *Guidelines for Ecological Impact Assessment in the United Kingdom, Final Draft*. Institute of Ecology and Environmental Management, Winchester.

ODPM (2005) *Planning Policy 9: Biodiversity and Geological Conservation*. HMSO, London.

Oldham RS, Keeble J, Swan MJS & Jeffcote M, (2000). *Evaluating the Suitability of Habitat for the Great Crested Newt (Triturus cristatus).* Herpetological Journal. Vol. 10, pp. 143-155.

MAP 1 Site Location

Site Location

SCALE: 1:58,460 at A4

0 800 1,600 Metres

N

EPR

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CLIENT: George Wimpey UK Ltd.

PROJECT: Stanway, Colchester Essex

DATE: November 2007

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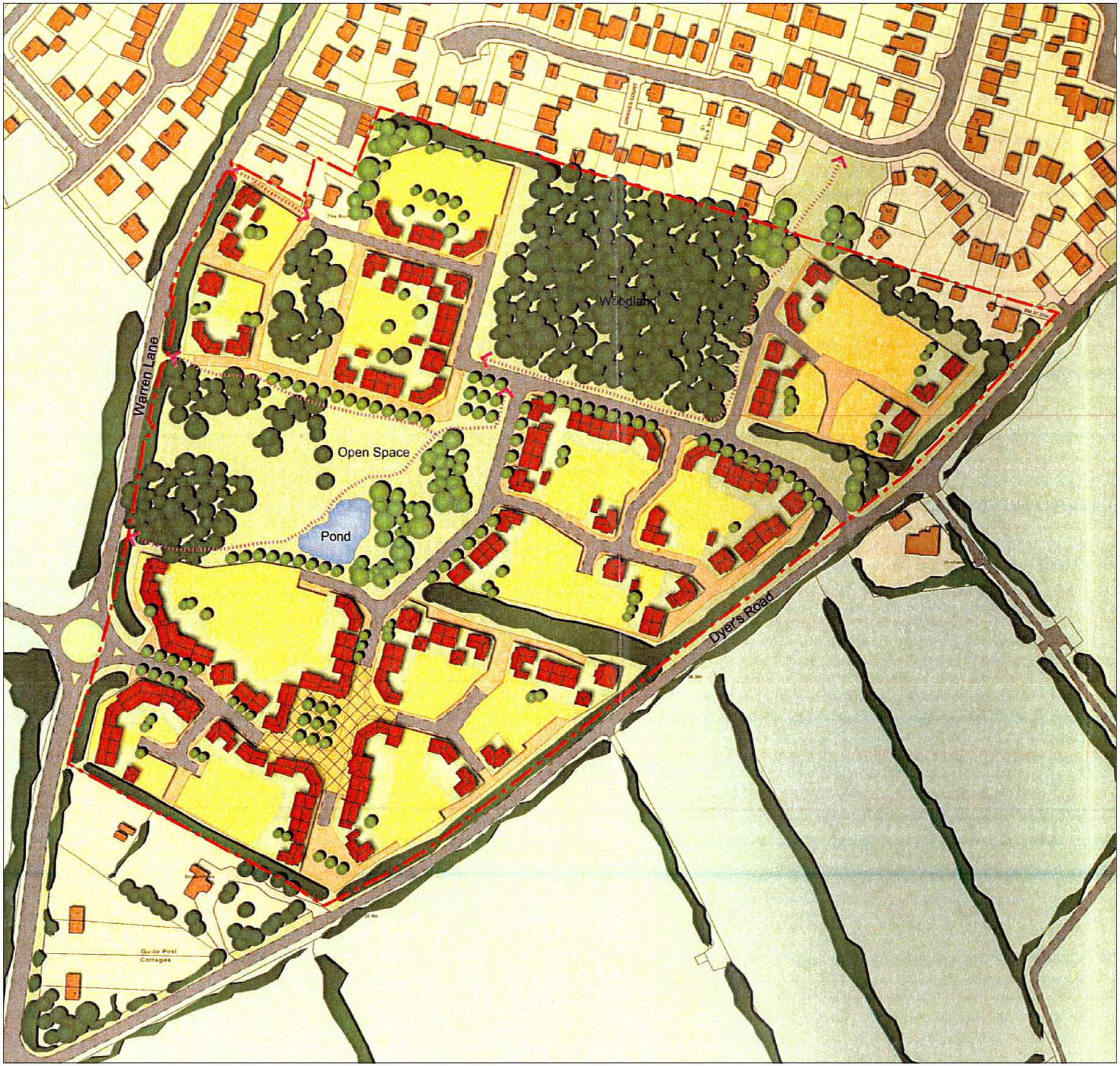

MAP 2 Indicative Layout

KEY

- Site boundary
- Dwellings and road layouts shown indicatively
- Open space
- Existing trees and hedgerows
- Proposed trees
- Balancing pond/water feature
- Square
- Footpath

**Source of Indicative Layout: CSa Environmental Planning*

N

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environmental planning

CLIENT: Taylor Wimpey UK Ltd.

PROJECT: Stanway, Colchester, Essex

DATE: November 2007

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P07/23

MAP 3 Distribution of Valuable & Vulnerable Features Within the Zone of influence

KEY

- Site Boundary
- Colchester District Local Wildlife Sites (LWS)
- Badger Record

Data source: Essex Ecology Services Ltd. (EECOS)

SCALE: 1:18,790 at A3

0 310 620 930 Metres

N

Ecological Planning & Research

CLIENT: Taylor Wimpey UK Ltd.

PROJECT: Stanway, Colchester, Essex

DATE: November 2007

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